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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,729	10/06/2000	Thomas R. ST.Myer	TRW(RG)4902	1573

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EXAMINER

MCANULTY, TIMOTHY P

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 06/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/684,729

Applicant(s)

ST.MYER, THOMAS R.

Examiner

Timothy P McAnulty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation regarding the "non-adhesively adhered" ribs and gasket as claimed in lines 1-3 of claim 11 contains new matter.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfenninger, Jr., et al. in view of Cartwright et al. and in further view of Kidzun et al..

Pfenninger, Jr., et al. discloses in figure 1, an axially extending input shaft 16; a housing 17; a bearing interposed between the housing and the input shaft; at least one series of axially spaced annular ribs 32 wherein adjacent ribs are separated by an annular groove; and a gasket 22 encircling the bearing having ribs and on an outer surface of said gasket. Pfenninger, Jr., et al. does not disclose said input shaft connected to a vehicle steering wheel as part of a vehicle steering column. However, Cartwright et al. teaches in figure 2 a vehicle steering column 10 including an input shaft 16 connected to a steering wheel 18; and a housing 32 including a cavity

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wherein a first and second bearing 34 are located; said first and second bearing being separated by a smooth annular. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the input shaft of Pfenninger, Jr. et al. connected to a steering wheel in view of the teachings of Cartwright et al. that it is old and well known in the art to provide axial support for an input shaft of a vehicle steering wheel with a bearing located within a housing. Pfenninger, Jr., et al. also does not disclose an inner surface of said gasket being cylindrical and engaging the outer race of said bearing or said ribs having a flat peak or said annular groove having a flat valley. . However, Kidzun et al. teaches in figures 1 and 2 a steering column including a gasket member 8 having an cylindrical inner surface engaging the outer race of a bearing and a ribbed outer surface. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pfenninger, Jr., et al. in view of the teachings of Kidzun et al. to include a gasket having a cylindrical inner surface engaging the outer race of a bearing and a ribbed outer surface to reduce the number of elements required to resist axial movement of the bearing.

Regarding claims 6 and 7, Kidzun et al. further teaches in figure 3, a bearing assembly including ribs 9 separated by annular grooves 12 wherein said rib includes a flat peak and the annular groove includes a flat valley. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference combination set forth above in view of the teachings of Kidzun et al. to include flat surfaces on the ribs and annular grooves so as eliminate a sharp edges which may cause damage to the gasket when said gasket is subjected to a shear load during axial loading of said input shaft.

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Additionally, the dimensional limitations regarding the flat peak and the flat valley are a matter of engineering design choice and the level of skill of one of ordinary skill in the art would produce a similar optimization.

*Response to Arguments*

5. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection. Pfenninger, Jr., et al. in lines 1-7 of column 1 discloses the rubber mounted bearing permits a certain amount of axial play between the shaft and the outer ring member. As claimed, the present invention limits the gasket member engaging the ribs to merely resist axial movement between the gasket and the housing not between the input shaft and the housing. Additionally, the term resist does not limit the invention to no relative movement between the gasket and the housing.

*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to bearing supports and vehicle steering column input shafts in general:

U.S. Patent No. 4,608,881 to Tanoue

UK Patent Application No. GB 2035471 A

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy P McAnulty whose telephone number is 703.308.8684. The examiner can normally be reached on Monday-Friday (7:30-5:00) alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on 703.308.3668. The fax phone numbers for the organization where this application or proceeding is assigned are 703.305.7687 for regular communications and 703.305.7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1113.

  
DAVID A. BUCCI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600

tpm  
June 6, 2002